

## The Impact of Military Exercises and Operations on Local Environment

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### Abstract

Like other countries in the world, Kenya and its neighbors have developed their militaries into more complex and highly organized institutions. The military which comprises air, sea and ground forces was largely a creation of the colonial government but have become vital in dealing with conventional and non-conventional security matters. Among the non-conventional security matters, environment has emerged as a new sphere in which the military has been actively involved; as a benevolent and malevolent agent through its exercises and operations. Despite the notable positive contributions, the negative impact of military exercises and operations in the environmental sphere has overshadowed the military as an institution. Sadly, these effects have for a long time been limited to military as a state institution while the negative impacts emanating from military-like activities of non-armed state groups such as militias, rebels, terrorists and guerillas have been ignored. This paper examines the impact of military services and operations on the environment in relation to military as an institution as well as those linked to military-like activities of the non-armed state groups such as militias, rebels, guerillas, and terrorist groups. The study relied on desktop review of existing literature on military, military activities. The analysis showed that military activities and exercises affect local environment directly and indirectly.

**Key Words:** Military, Services, Operations, environment, climate change, Impacts, Non-Armed State Groups.

### Introduction:

The Military and the physical environment constitute two essential components of a nation-state. The two represent instruments through which the state achieves its political goals (Ojo E, 2009; Munene M, 2012). The military, as one of the state institutions, serves as an instrument through which the state furthers its goals and objectives such as territorial protection. On the other hand,

the environment is the sum total of all external conditions of life, development and survival of an organism (UNEP, 2009). Physical environment is part of human environment and consists of physical features that occur naturally such as waters, natural vegetation, landform, rocks, weather and climate. In relation to states, the environment forms the space that the state uses to achieve its political goals locally and internationally (Munene, 2012).

This implies that any threat to the physical environment is a threat to the state. Similarly any threat to peace and security of a state will subsequently have an effect on the physical environment and has the potential of endangering the survival of the state. Thus, all phenomena that affect peace and security are relevant to the military as a state institution. These include daily, real, imagined and perceived threats. This makes military remain vibrant in terms of training, equipment and technology in order to deal with threats to peace and security. In all, the well-preparedness of the military determines its ability to promote and maintain peace and security within its borders. The entire process of preparing, equipping and engaging in activities that are aimed at promoting peace and security requires use of resources that exist in the environment such as oils, fossil fuels and hardware. The use and exploitation of these resources have direct implications on physical environment, humans and significantly contribute to global warming and endangers the state and its well being. This means that to ensure peace and security, there is need to have a balance between usage and exploitation of physical environment on one hand, and carrying out of military exercises and operations.

### **Military and Local Environment:**

In this analysis, the term military is used as a generic term to refer to two institutions. Firstly, it refers to military as a state institution that is composed of trained, uniformed, hierarchical and armed personals whose objective is to guarantee state/national security. From this definition, military is composed of three arms that are navy, army and air force. Secondly, military refers to Non-State Armed Groups (NSAGs) that includes armed bands, vigilantes, cultist groups, private security companies, criminal bands, tribal warriors, ethnic/religious/regional armies, private armies, militias, Islamist militants and rebels groups (Okumu and Ukelege, 2010). These groups

are condoned, supported or condemned by the state. Overall the groups undermine human security and the capacity of the state to guarantee peace and security. Based on their operational bases, the military as a state institution and NSAGs jeopardize the physical environment through activities.

Compared to the Non-State Armed Groups (NSAGs), the military is seen as a positive instrument and comes into existence by order or decree with the aim of winning war or suppressing upheavals and 'irredentist claims that may tear the society into shreds' (Ojo, E. 2008: 2). It is therefore endowed with certain organizational features such as central command, discipline, internal communication and self-sufficiency. In relation to the civilian population, the military is marked with superiority in organization, highly emotionalized symbolic status and a monopoly of force (Finer, 1962). Even where the military may appear poor and unsupplied, it still remains more highly structured than the civilian population or any civilian armed groups. In contrast, the Non-State Armed Groups based on their composition that includes, sometimes but not always, trained and former member of the air, navy and army are highly disorganized and unstructured. Some of them may be well uniformed such as the Lord Resistance Army (LRA) led by Kony in Northern Uganda. Majority are however un-uniformed, illiterate, untrained and lacking in hierarchy. Regardless of their structure and stamina, most NSAG are armed and exert a huge toll on stability, development and security of a country.

It is these attributes of the military that are projected on the environment turning it into a resource for the military in the effort to achieve specific objectives. And while the two, the military and the NSAG's are different in structure, composition, stamina, operations and objectives, it is their treatment of environment that attracts attention. For the two, physical environment that includes waters, natural vegetation, landform, rocks, weather and climate is a resource and source. As a source, it provides military supplies and materials that are needed to achieve military objectives. As a resource, it is the field in which people prepare for war and battles are fought. In this process, the environment is then 'brutalized and coerced' into military goals. This happens through military exercises and operations that take place either before, during or after the war.

Military exercises entail tactics carried out as simulation of war as well as instruction of personnel to enhance capacity to perform specific military functions and duties. Further, a military operation is a broad term that is used to define different aspects of military activities. For instance, the term is used to refer to military activities in the field and at the work places that are specific for national defense. This includes combat, combat training, maintenance of military equipment and systems such as weapons, aircrafts, ships, submarines, missiles, ordinances and tactical vehicles. Military operation also refers to military activities such as peace keeping, information covert operation and counter-insurgencies. It also refers to coordinated military actions of a state in response to developing situations. Local environment is used in this paper to refer to different localities. Consequently, military exercises and activities whether in Kenya, Somalia, Uganda and Sudan will affect local populations in the specified area to a certain degree. For instance, military bombings in Kismayo will result to displacement, damages and loss of eco-system. Similar effects will be felt if a bomb is detonated in Nairobi. The next section of the paper is divided into three parts. Part one provides an overview of the effects of military operations on environment. Part two covers the direct impact of military exercises and operations while part three examines the indirect impact of military exercises and operations.

### **Effects of Military Operations on Environment:**

By and large, the military affects the environment both as a benevolent and malevolent actor. As a benevolent actor, the military as a state institution can be used to restore forest cover in areas where it has been destroyed. This has been practiced in Kenya where the Ministry of Environment and Natural Resources (MENR) in 2007 outlined area of focus for the military as to include, increasing the country's tree cover from less than 2% to 10% (Muniafu, M, 2007). This description was based on the fact that military as an institution has presence in all parts of the country. The Military was therefore in a position to facilitate transportation of tree seedlings, mobilizing people to plant trees and sustaining tree-planting programs. Besides tree planting, the military can also play a role in the overall monitoring of natural habitats or high biodiversity areas. Currently, these bio-diversities are under pressure from local populations who have been

forced to exploit these resources due to increase in poverty levels, unemployment and under employment of young people. In time of calamities, military equipment and technical capacity can be utilized to secure rural regions that have undergone erosion and repair the infrastructure. The military also play a key role protection of physical environment and wildlife due to their ability to access areas, advanced technology and skills that are unavailable to general public and to some extent to other security agents.

Despite the positive roles played by the military in protecting and restoring the environment, the negative effects of military exercises and operations on environment have been a dominant theme among environmentalists. This is because of the gross effects of military activities on environment as well as failure by the state to deal with the military. In addition, the sphere of militarism has seen the rise of NSAGs whose military-like operations threatens both the state and the environment with tremendous effects. Unfortunately, the effect of the military-like exercises and operations of these groups on environment is not easily estimated because of a number of factors. Firstly, these groups operate in hazardous manner thus making it hard to track the damage on environment. Secondly, some of the groups live with their families and within the communities and only leave their homes when carrying out their military operations. Thirdly, some of the weapons used by the groups are part of culturally acceptable weapons therefore making it hard to classify their weaponry as a threat to environment. Examples include; swords, poisonous arrows and spears used by communities in East Africa and that have been used to hunt and kill wildlife for trade. Lastly, some of these groups are protected by the political class consequently environmental crimes committed by these groups are masqueraded as individual rights.

The effect of military exercises and operations on local environment can be divided into two; direct and indirect. Direct impacts includes those that arises and solely from military action such as bush maneuvers, unattended post drill ordinances, land mines and explosive remnants of war, musketry training among others (UNEP, 2007). Indirect impacts includes all impacts that can be credibly sourced in whole or in part to the conflicts and the associated war economy excluding the direct impacts (UNEP, 2007)

### **Direct Impacts of Military Exercises and Operations on Local Environment:**

In principle, military readiness implies that the military must carry out training often. Military training involves maneuvers, aerial and ground paratroopers and arms testing. In Kenya, these trainings take place in Archers Post in Samburu, Don Dol in Laikipia District and Athi River. Military training such as musketry that involves typical training or competition comprises several troops and each trooper dispenses packs of magazine with several rounds of ammunitions (Wandhams N, 2009). They also involves fire arms live ammunitions drills like those that take place in Athi River Rifle Range, Embakasi APTC, Kiganjo and Archers Post in Isiolo. These trainings affect the environment and humans in different ways. For instance, low helicopter flights that are less than 50 metres high cause disturbance of natural tranquility within the ecosystem dynamics, hence disrupting the physical food chain. For example Zebras in Samburu often scared off by the deafening sound at Don Dol. Noting that the trainers in Samburu and Laikipia comprises of foreign troops from USA and Britain, Kenya Wildlife Services has accused the foreign troops of practicing illegal tourism with their low flying planes (Wanyama, 2007)..

The trainings in Samburu are also said to be hampering conservation efforts as the army often scare off animals in the nearby Shaba and Buffalo Springs game reserves (BBC News, 2010). This is because the deafening noises from the drills scare elephants, giraffes and other wild animals from the reserves. Other effects of the training are seen through the water catchment areas of Athi, Tana and Uaso Nyiro basins which have been polluted by remnants of military hardware that has been draining into the rivers during the rainy seasons (Wanyama H, 2011). Besides the effects on the physical environment, unattended and unexploded post-drill ordinances pose danger to moving animals while spent cartridges, casings and wrecks litter the environment as un-recycled waste. The ordnances have also maimed children and adults in the regions who have unknowingly stepped on the unexploded mines (Wanyama, H, 2011).

Besides training, other military operations and weaponry that affect the environment includes bombs, rival shootings, bombings, missiles airstrikes and landmines. Airstrikes and bombs leads to migration of wildlife from their habitual areas to human settlements therefore generating human-wildlife conflict (Kaaria, 2011). It can also contribute to destruction of other eco-systems as wildlife flees to escape danger posed by military operations. The encounter between different animals can lead to decline of some of the wildlife species as some become immediate preys of other wildlife. Conversely, landmines, which is the most commonly used weapon has long term effect. It is estimated that, worldwide at least 26,000 people are injured or killed by landmines annually and a greater numbers of domestic and wild animals killed (Torres-Nachon, C, 2000). The consequences of landmines on environment are; deforestation, soil erosion, water pollution and rendering fertile farmland unusable. Since landmines are planted just below the surface of the land, their greatest impact is felt in soil quality and composition (Torres-Nachon, 2000). When landmines explode, they destroy surrounding vegetation, shatter and displace the soil making it vulnerable to soil and wind erosion. Landmines have been used in war-front such as in Sudan. In this case, the Sudanese Army used the landmines to trap the rebels into the Nuba Mountains while the SPLA used the landmines to whenever they retreated and as a method of keeping away the army from their territories (UNEP, 2007b).

Of all the state institutions, military is known for using heavy vehicles that negatively affect the environment. The heavy vehicles damage the soil structure leading to soil erosion. Furthermore, the use of heavy military vehicles and military equipment that have no hindsight on safer environment that echoes 3Rs (Reduce, Re-use and Recycle) while disposing and acquiring the merchandize make military hardware prone to polluting the environment (UNEP, 2007b). In addition, use of vehicles and equipment that are not possible to recycle effectively result to pollution as the vehicles and related military equipment are allowed to decay on site within various depots.

Although NSAGs are not known for carrying out trainings in the open, they nonetheless do have training exercises that affect the environment. Their training activities may involve actual training in hide-out. Where training takes place in the forests, the groups clear out forest cover to

create ground for training. This method was used by South Sudan Liberation Army (SPLA) and the Lord Resistance Army (LRA). Besides using the forest as hide-outs and training grounds, NSAGs use the physical environment as hiding places, store and target locations. All these factors endanger the environment. For instance, as hiding places, the groups clear the trees in order to create shelter and source out firewood for lighting fire at night for warmth and to scare away wild animals. The fire is also used for cooking. This implies that, other than destroying the living ecosystems such as trees, the NSAGs also contribute to the depletion of ozone layer through the smoke emitted into the environment.

For other groups such as Mungiki, some of their tenets such as baptism for the new recruits contribute to pollution of natural resources such as water. For instance, to be a member of Mungiki, one is required to undergo oathing, which involves baptism in the river by 'ritual elders' (Nyatuga, 2001). In 2007, Mungiki followers were arrested while carrying out oathing activities along the river banks in Gakui Village in Murang'a (Wabala D, 2007). By bathing and taking blood in rivers, the militia members pollute rivers which are a source of water for people in the region. In case of Darfur, although non-conventional weapons were not used, the Janjaweed were accused of poisoning wells, raping women and intimidating people in Darfur (UNEP, 2007b)

In general military operations, whether by the military or the NSAGs have had tremendous effects on environment. In Sudan, the military activities contributed to loss of almost 12 per cent forest cover in 15 years (UNEP, 2007a). Military operations also contributed to lack of vegetation re-growth due to constant bombing that were carried out in Nuba Mountains, the hide-outs of the SPLA. On its part, the SPLA military tactics included burning of mechanized land in upper Nile Province as way of keeping the government troops away from their territories (Suliman, M, 2007). Other war strategies that have been used by the military and NSAGs that have had negative impact on the environment include scorched earth method. The method was used by the Uganda Army in Northern Uganda with the aim of weakening the rebels. In response, the rebels burned fertile agricultural land as a way of punishing the communities whom they accused of



betraying them. In the process, civilian populations lost their lives and properties as their homes were mistakenly attacked.

### **Indirect Impacts of Military Operations and Exercises on Environment:**

The indirect impacts of military exercises and operations on environment are those that are credibly sourced in whole or part from the conflicts. In Uganda, besides using conventional weapons that emit chemicals into the environment therefore polluting the air, the military-like activities of LRA have had its own toll on the physical environment. For instance, the violence meted on the local population forced the people to move to camps of the Internally Displaced Persons (IDPs) in Pader (IDPs) (Owona J, 2008). This in turn increased the demand for firewood, poles, water, thatching materials and affected the integral natural resources. The situation was worsened after the Uganda Army forced all the displaced people to live in a single territory on land. This forceful displacement was considered militarily necessary in combating the LRA and as a means of helping to distinguish; civilians from fighters (CSO, 2005). In addition to the creation of single-compound camps, the Uganda Peoples Defense Force (UPDF) set up a security perimeter around the camps. This forced the population to live and work in limited land mass therefore putting further pressure on the natural resources. While this argument were good for military objective, they were however destructive to the environment.

For the NSAG such as the militias, rebels' and guerillas, timing is very crucial to their activities in relation to the environment. This is because; it is during conflict situation that such groups accrue huge profits for themselves and for furthering the war. For instance Al-shabaab, a militia group based in Central and Southern Somalia, is said to be making an equivalent of \$15million each year in taxes from charcoal exports (Muthoni, H, 2011). This is besides the effect of their combat activities on human and other physical features. In the case of Sudan, natural resource looting and war economy was a common feature of the war. Natural resource looting is defined as the uncontrolled and often illegal extraction of natural resources that commonly occurs during extended conflicts (UNEP, 2007a). The resources in question in Sudan were timber, ivory and

bush meat. With regard to timber, plantation teak and natural mahogany were extracted and exported regionally and internationally by the military, SPLA and associated militias.

For Somalia, the Al-shabaab are also known for using gun powder, petrol bombs and grenades which cause air pollution and destroys soil structure thus contributing to soil erosion. These are aimed at displacing the population and forcing allegiance to the group. Moreover, bombs and grenades contribute to global warming due to the heat generated by explosions. The terrorist activities of the Al-shabaab have also created a huge population of refugees in the Daadab refugee camp in Kenya therefore resulting to deforestation and de-vegetation around the camps (Muthoni H, 2011). Military weaponry affect human particularly the children who often confuse the left weapons and other military gadgets for toys resulting to loss of lives or parts of the body. Military presence in an area contributes to rise of ghost towns. This is because of the overall assumption that presence of military camp or training based in a region will result to actual development of the area as the military resources will be used in the area. Often, this does not happen thus resulting to rise of ghost towns and frustration among the local population. Other indirect impacts include unsustainable underground water extraction in camps and water pollution.

Overall, the extent to which military operations and exercises affects the environment is largely dependent on goal of using certain weapon, location of the combat, the experience of the soldiers and the target's size and distance.

**Conclusion:**

Regardless of whether military exercises and operations takes place before, during and after the war, it is clear that military whether, a state institution or NSAGs, affects the environment. The environment is also a resource and a source for the military because the exercises and operations take place in its sphere. This means that addressing the threats to environment and more so those that emanates from the military is critical. However, this is an uphill task and is compounded by many challenges. Firstly, the military as a state institution is also an industry that is currently dominated by corporations who are not keen to implement environment protection measures.

Secondly, the rise of NSAGs is not only a threat to the state but also to the environment. It is there important to deal with such groups in order to ensure peace and security. Unfortunately, waging war against such groups implies waging war against the environment. Thirdly, the need to advance military technology in order to deal with new threats to state such as terrorism disregards environmental protection. Fourthly military is not seen as an industry, yet it behaves like one. Fifthly, states operate a double standard in that they are not willing to subject their armed forces to the levels of transparency and accountability that are required of other governmental actors.

Sixth is dealing NSAGs such as tribal warriors who use the physical environment as a way of expressing their cultural rights. For groups like the Kalenjin warriors, Maasai Morans in Kenya, natural environment serves as source of weaponry, hideouts, footpaths and training centers. Although, there is lack of substantial figures of ecosystem destroyed as a result of the activities of the tribal warriors, the demand for their services either by the political class or the elders from their respective communities is evidence of how their activities can endanger the environment. The challenge with establishing the extent to which the tribal warriors contribute to environmental degradation is because most of their activities such as communal raids are carried out place at night within the vicinity of community land. On the other hand, the making of weapons such as bows, arrows, and spears is viewed as cultural activity and therefore an intellectual property right that should be protected. This poses a challenge for the environmentalists in dealing with tribal warriors and consequently NSAGs.

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